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Adopted Mean Places of Comparison Stars, 1880·0.

	R. A. h	m	s	Declination. °	′	″	
a	23	5	7·21	+9	17	53·1	Micrometrically connected with Rumker 10913,
b	22	53	5·23	+5	30	26·6	Bonn Catalogue +5° No. 5114,
c	22	50	28·89	+4	52	49·4	Bonn Catalogue +4° No. 4927,
d	22	49	20·28	+4	10	48·0	Weisse Bessel xxii^h No. 1000,
e	22	51	48·70	+0	1	30·8	Micrometrically connected with W. B. xxii^h No. 1192,
f	22	54	28·52	−0	27	28·6	Gr. 12 yr. Cat. No. 2067, and Armagh No. 5066,
g	22	55	14·08	−0	31	20·9	Weisse Bessel xxii^h No. 1132.

The observations have been reduced and the comparisons with the Ephemeris have been made with the necessary corrections. This Comet has been so faint during its present apparition that the observations have been made with considerable difficulty. In moonlight it has been impossible to see it with the 12¼-inch Refractor, and from this cause, together with cloudy weather, it has not been observed since the 4th inst. The observations were made, under my direction, by Mr. W. Plummer.

Oxford,
1880, *November* 11.

On the Spectrum of Comet 1880 *d* (*Hartwig's*).

By W. H. M. Christie, Esq.

Cloudy weather prevented any observation of this comet at the Royal Observatory, Greenwich, till October 7, by which time it had considerably diminished in brightness. I observed the spectrum with the single prism spectroscope on the Great Equatoreal on October 7, 11, and 12, and found that it consisted of the three usual cometary bands, the nucleus giving a continuous spectrum.

Measures of the position of the brightest band as compared with the green carbon-band at 5198 (alcohol in a vacuum-tube) on Oct. 7 and 12, and with that at 5165 (blue base of flame) on Oct. 11 and 12, were made with the following results:—

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1880	G.M.T.		Comet-band.	Wave-length inferred.	Width of Slit.
	h	m			in.
Oct. 7	9	0	Red Edge	5198 − 13 = 5185	0·018 = 35 tenth-metres
	9	0	Red Edge	5198 + 15 = 5213	
	9	0	Red Edge	5198 + 6 = 5204	
Oct. 11	9	0	Centre	5165 − 22 = 5143	0·0195 = 38 tenth-metres
	9	20	Centre	5165 + 36 = 5201	
Oct. 12	7	30	Centre	5198 + 7 = 5205	0·0165 = 32 tenth-metres
	8	0	Centre	5198 − 44 = 5154	
	8	20	Centre	5198 − 50 = 5148	
	,,		,,	5165 − 2 = 5163	
Means—					
					in.
Oct. 7				5201	0·018 = 35 tenth-metres
Oct 11 and 12				5169	0·018 = 35 tenth-metres

The less refrangible edges of the comet-band and carbon-band were compared on Oct. 7, and the centres of the brightest part of the two bands on Oct. 11 and 12.

These measures leave it uncertain whether the comet-band coincides with the band in the second spectrum of carbon (vacuum-tube) at 5198, or with that in the first spectrum (blue flame of Bunsen burner) at 5165. The measures on Oct. 7 were more satisfactory than those on Oct. 11 and 12, and are entitled to more confidence, both the comet-band and the carbon-band being much brighter. On Oct. 12 the carbon-band from the vacuum-tube (which was an old one) was hardly visible, being overpowered by the complex or band-spectrum of hydrogen which had, in course of time, replaced the ordinary hydrogen spectrum of four lines. The measures of the carbon-band were thus little more than guesses on this day. In the comparisons with the flame spectrum, it was difficult to avoid parallax, the slit being wide and the flame blown about by the wind.

The real difficulty in the determination of the exact position of the comet-band arises from the width of the slit, which is necessarily considerable. As far as these observations go, they would seem to show that different results are obtained according as the edge or the centre of the band in each spectrum is compared; and it is not easy to say which is correct, since the band (with a narrow slit) is sharp on the red side and fades off towards the blue. Further observations, however, are wanted to decide whether there is a real discordance as here indicated.

No measures could be made of the two other comet-bands. The band in the blue was only seen on Oct. 7, and Mr. Maunder then estimated that the band in the green was at least five times as bright as the two others.

Royal Observatory, Greenwich,
1880, *November* 10.

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